

1028 SW HIGH FIELD TERRACE

ADDRESS

LAKE CITY

Florida

State

Americas Homeplace

Client

MARCH 15 2021

Date

Prepared by James Zaleski P.E 51544
2305 Haverhill Rd
Tallahassee, FL 32312
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Specifications for Wind Analysis:**120 MPH WIND VELOCITY,****EXPOSURE B**

Per Florida Building Code 7th EDITION (2020), Based on calculations as per ASCE 7-16

Stud Species SPF

Importance Factor: 1.0
Building Category: II
Wind Exposure: B
Internal Pressure Coefficient: 0.18

Top Plate Species: SPF
Mean Roof Height: 14.64
End Zone Length: 5.0
Roof Slope: 7/12

2x4 studs up to 10'-0" at 16" o.c.
2x4 studs from 10'-0" -12'-0" at 12" o.c.

All Walls over 10 Feet Require 2 Rows of Blocking

Hurricane Clips (HC):

Simpson Strong-Tie (or equal) as shown or per Truss Manufacturer

Truss Location**Model # @ End Zone****Model # @ Interior Zone**BUILDING1-Simpson H10A1-Simpson H10AGirder Trusses1- SIMPSON HTS201- SIMPSON HTS 20**Roof Sheathing:** 7/16" OSB Sheathing**Nailing Pattern Edges**

Fastener: 8d Ring Shank (perimeter) 4" o.c. Field 6" o.c.
Edge nail spacing to be 3" for the first panel at all eaves and gables

Wall Bracing: 7/16" OSB Sheathing

100% continuous on all exterior Stud walls

Nailing Pattern

Fastener: 8d Ring Shank Edges 4" O.C Field 8" O.C

Wall Straps: Simpson Strong-Tie (or equal)**Top****Bottom**Model: SP4 w/6-10d nails

Spacing 1st level:

SPH4 @ 32" O.C..SPH4 @ 32" O.C**Anchor Bolts:** 1/2" x 10" J bolt at 48" o.c.**General Notes:**

1. Girder trusses require special attention for uplift requirements. See truss company drawings.
2. Walls over 10' require 2 rows of blocking
3. All load bearing and shear walls to be framed with a minimum 2 x 4 No.2 grade SPF studs or better.
4. Alternate hurricane clips may be used meeting minimum specifications as noted above.



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HEADER SIZE AND STRAPPING CHART

SPAN	HEADER SIZE	QUANTITY OF JACK STUDS AT EACH END	QUANTITY OF KING STUDS AT EACH END	STRAPPING TO JACK STUDS AT EACH END	STRAPPING TO KING STUDS AT EACH END
0'-0" TO 3'-6"	2 2X8" WITH ½" PLATE	1	1	NONE	1 SIMPSON SP4H
3'-6" – 6'-6"	2 2X10" WITH ½" PLATE	2	1	1 SIMPSON MSTA24	1 SIMPSON SP4H
6'-6" – 9'-3"	2 -2X12" WITH ½" PLATE OR 4-2 X 10" WITH ½" PLATE	3	2	2 SIMPSON MSTA24	2 SIMPSON SP4H
9'-3" – 12'-0"	2- 1 ¾" X 9 ¼" LVL	3	2	2 SIMPSON MSTA24	2 SIMPSON SP4H
12'-0" – 15'-9"	2- 1 ¾" X 11 ¼" LVL	4	3	4 SIMPSON MSTA24	2 SIMPSON SP4H

JACK AND KING STUDS ARE 2 X4 IN ALL CASES SHEATH ALL EXTERIOR WALLS WITH 7/16" OSB ALL STUDS OVER 10'-0" TO RECEIVE 1 ROW OF BLOCKING

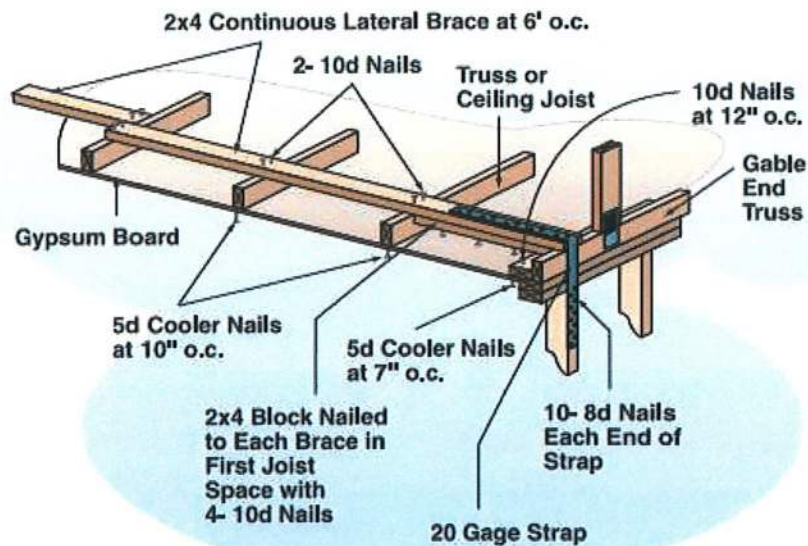


Figure 11. Ceiling Bracing for Gable Endwall



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MecaWind v2378

Software Developer: Meca Enterprises Inc., www.meca.biz, Copyright © 2020

Calculations Prepared by:

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TALLAHASSEE, FLORIDA, 32312
Date: Mar 15, 2021

Location: 1028 SW HIGH FIELD TER LAKE CITY FL
Description:
DANIELLO

Basic Wind Parameters

Wind Load Standard	= ASCE 7-16	Exposure Category	= B
Wind Design Speed	= 120.0 mph	Risk Category	= II
Structure Type	= Building	Building Type	= Enclosed

General Wind Settings

Incl_LF	= Include ASD Load Factor of 0.6 in Pressures	= True
DynType	= Dynamic Type of Structure	= Rigid
NF	= Natural Frequency of Structure (Mode 1)	= 1.000 Hz
Zg	= Altitude (Ground Elevation) above Sea Level	= 0.000 ft
Bdist	= Base Elevation of Structure	= 0.000 ft
SDB	= Simple Diaphragm Building	= True
MWFRSType	= MWFRS Method Selected	= Ch 27 Pt 1

Topographic Factor per Fig 26.8-1

Topo	= Topographic Feature	= None
Kzt	= Topographic Factor	= 1.000

Building Inputs

RoofType:	Building Roof Type = Gabled	W	: Width Perp to Ridge = 34.000 ft
L	: Length Along Ridge = 50.000 ft	Eht	: Eave Height = 9.100 ft
RE	: Roof Entry Method = Slope	Slope	: Slope of Roof = 7.0 :12
Theta	: Roof Slope = 30.26 Deg	Par	: Is there a Parapet = False

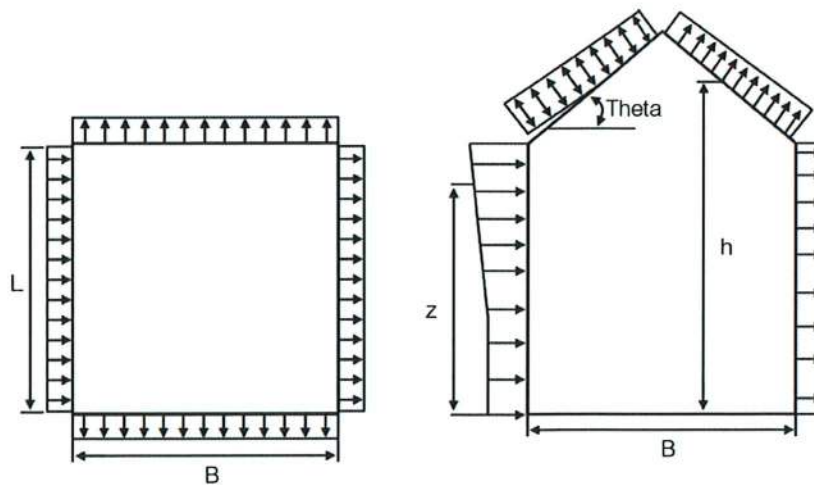
Exposure Constants per Table 26.11-1:

Alpha:	Table 26.11-1 Const = 7.000	Zg:	Table 26.11-1 Const = 1200.000 ft
At:	Table 26.11-1 Const = 0.143	Bt:	Table 26.11-1 Const = 0.840
Am:	Table 26.11-1 Const = 0.250	Bm:	Table 26.11-1 Const = 0.450
C:	Table 26.11-1 Const = 0.300	Eps:	Table 26.11-1 Const = 0.333

Overhang Inputs:

Std	= Overhangs on all sides are the same	= True
OHType	= Type of Roof Wall Intersections	= Soffit
OH	= Overhang of Roof Beyond Wall	= 2.000 ft

Main Wind Force Resisting System (MWFRS) Calculations per Ch 27 Part 1:



h	= Mean Roof Height above grade	= 14.642 ft
Kh	= $Z < 15 \text{ ft } [4.572 \text{ m}] \rightarrow (2.01 * (15/zg)^{(2/\text{Alpha})})$ {Table 26.10-1}	= 0.575
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
Zg	= Elevation above Sea Level	= 0.000 ft
Ke	= Ground Elevation Factor: $Ke = e^{-(0.0000362 * Zg)}$ {Table 26.9-1}	= 1.000
GCPI	= Ref Table 26.13-1 for Enclosed Building	= +/-0.18



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RA = Roof Area = 2375.61 sq ft
 LF = Load Factor based upon ASD Design = 0.60
 qh = $(0.00256 * K_h * K_{zt} * K_d * K_e * V^2) * LF$ = 10.81 psf
 qin = For Negative Internal Pressure of Enclosed Building use qh*LF = 10.81 psf
 qip = For Positive Internal Pressure of Enclosed Building use qh*LF = 10.81 psf

Gust Factor Calculation:

Gust Factor Category I Rigid Structures - Simplified Method
 G1 = For Rigid Structures (Nat. Freq.>1 Hz) use 0.85 = 0.85
 Gust Factor Category II Rigid Structures - Complete Analysis
 Zm = $0.6 * H_t$ = 30.000 ft
 Iz = $C_c * (33 / Z_m)^{0.167}$ = 0.305
 Lzm = $L * (Z_m / 33)^{Epsilon}$ = 309.993
 Q = $(1 / (1 + 0.63 * ((B + H_t) / Lzm)^{0.63}))^{0.5}$ = 0.914
 G2 = $0.925 * ((1 + 1.7 * Iz * 3.4 * Q) / (1 + 1.7 * 3.4 * Iz))$ = 0.874
 Gust Factor Used in Analysis
 G = Lessor Of G1 Or G2 = 0.850

MWFRS Wind Normal to Ridge (Ref Fig 27.3-1)

h = Mean Roof Height Of Building = 14.642 ft
 RHt = Ridge Height Of Roof = 20.183 ft
 B = Horizontal Dimension Of Building Normal To Wind Direction = 50.000 ft
 L = Horizontal Dimension Of building Parallel To Wind Direction = 34.000 ft
 L/B = Ratio Of L/B used For Cp determination = 0.680
 h/L = Ratio Of h/L used For Cp determination = 0.431
 Slope = Slope of Roof = 30.26 Deg
 OH_Top_+X+Y = Overhang Coefficient Overhang +X+Y (Leeward) = -0.6, -0.6
 OH_Top_+X-Y = Overhang Coefficient Overhang +X-Y (Windward) = 0.23, -0.2
 OH_Top_+Y = Overhang Coefficient Top +Y (Leeward) = -0.6, -0.6
 OH_Top_-X+Y = Overhang Coefficient Overhang -X+Y (Leeward) = -0.6, -0.6
 OH_Top_-X-Y = Overhang Coefficient Overhang -X-Y (Windward) = 0.23, -0.2
 OH_Top_-Y = Overhang Coefficient Top Windward Edge = 0.23, -0.2
 Roof_LW = Roof Coefficient (Leeward) = -0.6, -0.6
 Roof_WW = Roof Coefficient (Windward) = 0.23, -0.2
 Soffit_-Y = Overhang Coefficient Soffit -Y = 0.8, 0.8
 Cp_WW = Windward Wall Coefficient (All L/B Values) = 0.80
 Cp_LW = Leeward Wall Coefficient using L/B = -0.50
 Cp_SW = Side Wall Coefficient (All L/B values) = -0.70
 GCpn_WW = Parapet Combined Net Pressure Coefficient (Windward Parapet) = 1.50
 GCpn_LW = Parapet Combined Net Pressure Coefficient (Leeward Parapet) = -1.00

Wall Wind Pressures based On Positive Internal Pressure (+GCPI) - Normal to Ridge All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCPI	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
9.10	0.575	1.000	10.81	0.18	5.40	-6.54	-8.37	11.94	9.60

Wall Wind Pressures based on Negative Internal Pressure (-GCPI) - Normal to Ridge All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCPI	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
9.10	0.575	1.000	10.81	-0.18	9.29	-2.65	-4.48	11.94	9.60

Notes Wall Pressures:

Kz = Velocity Press Exp Coeff
 qz = $0.00256 * K_z * K_{zt} * K_d * V^2$
 Side = $q_h * G * C_{p_SW} - q_{ip} * +GCPI$
 Leeward = $q_h * G * C_{p_LW} - q_{ip} * +GCPI$
 * Minimum Pressure: Para 27.1.5 no less than 9.60 psf (Incl LF) applied to Walls
 + Pressures Acting TOWARD Surface
 Kzt = Topographical Factor
 GCPI = Internal Press Coefficient
 Windward = $q_z * G * C_{p_WW} - q_{ip} * +GCPI$
 Total = Windward Press - Leeward Press
 - Pressures Acting AWAY from Surface

Roof Wind Pressures for Positive & Negative Internal Pressure (+/- GCPI) - Normal to Ridge All wind pressures include a load factor of 0.6

Roof Var	Start Dist ft	End Dist ft	Cp_min	Cp_max	GCPI	Pressure Pn_min* psf	Pressure Pp_min* psf	Pressure Pn_max psf	Pressure Pp_max psf
OH_Top_+X+Y	N/A	N/A	-0.600	-0.600	0.000	-5.51	-5.51	-5.51	-5.51
OH_Top_+X-Y	N/A	N/A	0.230	-0.200	0.000	2.11	2.11	-1.84	-1.84
OH_Top_+Y	N/A	N/A	-0.600	-0.600	0.180	-3.57	-7.46	-3.57	-7.46

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OH_Top_-X+Y	N/A	N/A	-0.600	-0.600	0.000	-5.51	-5.51	-5.51	-5.51
OH_Top_-X-Y	N/A	N/A	0.230	-0.200	0.000	2.11	2.11	-1.84	-1.84
OH_Top_-Y	N/A	N/A	0.230	-0.200	0.180	4.06	0.17	0.11	-3.78
Roof_LW	N/A	N/A	-0.600	-0.600	0.180	-3.57	-7.46	-3.57	-7.46
Roof_WW	N/A	N/A	0.230	-0.200	0.180	4.06	0.17	0.11	-3.78
Sofit_-Y	N/A	N/A	0.800	0.800	0.180	9.29	5.40	9.29	5.40

Notes Roof Pressures:

Start Dist = Start Dist from Windward Edge End Dist = End Dist from Windward Edge
Cp_Max = Largest Coefficient Magnitude Cp_Min = Smallest Coefficient Magnitude
Pp_max = $q_h * G * Cp_{max} - q_{ip} * (+GCPi)$ Pn_max = $q_h * G * Cp_{max} - q_{in} * (-GCPi)$
Pp_min* = $q_h * G * Cp_{min} - q_{ip} * (+GCPi)$ Pn_min* = $q_h * G * Cp_{min} - q_{in} * (-GCPi)$
OH = Overhang X = Dir along Ridge Y = Dir Perpendicular to Ridge Z = Vertical
* The smaller uplift pressures due to Cp_Min can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7
+ Pressures Acting TOWARD Surface - Pressures Acting AWAY from Surface

MWFRS Wind Parallel to Ridge (Ref Fig 27.3-1)

h	= Mean Roof Height Of Building	= 14.642 ft
RHt	= Ridge Height Of Roof	= 20.183 ft
B	= Horizontal Dimension Of Building Normal To Wind Direction	= 34.000 ft
L	= Horizontal Dimension Of building Parallel To Wind Direction	= 50.000 ft
L/B	= Ratio Of L/B used For Cp determination	= 1.471
h/L	= Ratio Of h/L used For Cp determination	= 0.293
Slope	= Slope of Roof	= 30.26 Deg
OH_Bot	= Overhang Bottom (Windward Face Only)	= 0.8, 0.8
OH_Top	= Overhang Top Coeff (0 to h/2) (0.000 ft to 2.000 ft)	= -0.18, -0.9
OH_Top	= Overhang Top Coeff (0 to h/2) (2.000 ft to 7.321 ft)	= -0.18, -0.9
OH_Top	= Overhang Top Coeff (h/2 to h) (7.321 ft to 14.642 ft)	= -0.18, -0.9
OH_Top	= Overhang Top Coeff (h to 2h) (14.642 ft to 29.283 ft)	= -0.18, -0.5
OH_Top	= Overhang Top Coeff (>2h) (>29.283 ft)	= -0.18, -0.3
OH_Top	= Overhang Top Coeff (>2h) (>52.000 ft)	= -0.18, -0.3
Roof	= Roof Coeff (0 to h/2) (2.000 ft to 7.321 ft)	= -0.18, -0.9
Roof	= Roof Coeff (h/2 to h) (7.321 ft to 14.642 ft)	= -0.18, -0.9
Roof	= Roof Coeff (h to 2h) (14.642 ft to 29.283 ft)	= -0.18, -0.5
Roof	= Roof Coeff (>2h) (>29.283 ft)	= -0.18, -0.3
Cp_WW	= Windward Wall Coefficient (All L/B Values)	= 0.80
Cp_LW	= Leeward Wall Coefficient using L/B	= -0.41
Cp_SW	= Side Wall Coefficient (All L/B values)	= -0.70
GCPn_WW	= Parapet Combined Net Pressure Coefficient (Windward Parapet)	= 1.50
GCPn_LW	= Parapet Combined Net Pressure Coefficient (Leeward Parapet)	= -1.00

Wall Wind Pressures based On Positive Internal Pressure (+GCPi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCPi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
20.18	0.626	1.000	11.76	0.18	6.05	-5.67	-8.37	11.73	9.60
17.05	0.596	1.000	11.21	0.18	5.68	-5.67	-8.37	11.35	9.60
9.10	0.575	1.000	10.81	0.18	5.40	-5.67	-8.37	11.08	9.60

Wall Wind Pressures based on Negative Internal Pressure (-GCPi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

Elev	Kz	Kzt	qz	GCPi	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft			psf		psf	psf	psf	psf	psf
20.18	0.626	1.000	11.76	-0.18	9.94	-1.78	-4.48	11.73	9.60
17.05	0.596	1.000	11.21	-0.18	9.57	-1.78	-4.48	11.35	9.60
9.10	0.575	1.000	10.81	-0.18	9.29	-1.78	-4.48	11.08	9.60

Notes Wall Pressures:

Kz = Velocity Press Exp Coeff Kzt = Topographical Factor
qz = $0.00256 * Kz * Kzt * V^2$ GCPi = Internal Press Coefficient
Side = $q_h * G * Cp_{SW} - q_{ip} * +GCPi$ Windward = $q_z * G * Cp_{WW} - q_{ip} * +GCPi$
Leeward = $q_h * G * Cp_{LW} - q_{ip} * +GCPi$ Total = Windward Press - Leeward Press
* Minimum Pressure: Para 27.1.5 no less than 9.60 psf (Incl LF) applied to Walls
+ Pressures Acting TOWARD Surface - Pressures Acting AWAY from Surface

Roof Wind Pressures for Positive & Negative Internal Pressure (+/- GCPi) - Parallel to Ridge
All wind pressures include a load factor of 0.6

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Roof Var	Start Dist ft	End Dist ft	Cp_min	Cp_max	GCPI	Pressure Pn_min* psf	Pressure Pp_min* psf	Pressure Pn_max psf	Pressure Pp_max psf
OH_Bot	N/A	N/A	0.800	0.800	0.000	7.35	7.35	7.35	7.35
OH_Bot	N/A	N/A	0.800	0.800	0.000	7.35	7.35	7.35	7.35
OH_Top (-X+Y)	0.000	2.000	-0.180	-0.900	0.000	-1.65	-1.65	-8.27	-8.27
OH_Top (-X-Y)	0.000	2.000	-0.180	-0.900	0.000	-1.65	-1.65	-8.27	-8.27
OH_Top (-Y)	2.000	7.321	-0.180	-0.900	0.180	0.29	-3.60	-6.32	-10.21
OH_Top (+Y)	2.000	7.321	-0.180	-0.900	0.180	0.29	-3.60	-6.32	-10.21
OH_Top (-Y)	7.321	14.642	-0.180	-0.900	0.180	0.29	-3.60	-6.32	-10.21
OH_Top (+Y)	7.321	14.642	-0.180	-0.900	0.180	0.29	-3.60	-6.32	-10.21
OH_Top (-Y)	14.642	29.283	-0.180	-0.500	0.180	0.29	-3.60	-2.65	-6.54
OH_Top (+Y)	14.642	29.283	-0.180	-0.500	0.180	0.29	-3.60	-2.65	-6.54
OH_Top (-Y)	29.283	52.000	-0.180	-0.300	0.180	0.29	-3.60	-0.81	-4.70
OH_Top (+Y)	29.283	52.000	-0.180	-0.300	0.180	0.29	-3.60	-0.81	-4.70
OH_Top (+X+Y)	52.000	54.000	-0.180	-0.300	0.000	-1.65	-1.65	-2.76	-2.76
OH_Top (+X-Y)	52.000	54.000	-0.180	-0.300	0.000	-1.65	-1.65	-2.76	-2.76
Roof (+Y)	2.000	7.321	-0.180	-0.900	0.180	0.29	-3.60	-6.32	-10.21
Roof (-Y)	2.000	7.321	-0.180	-0.900	0.180	0.29	-3.60	-6.32	-10.21
Roof (+Y)	7.321	14.642	-0.180	-0.900	0.180	0.29	-3.60	-6.32	-10.21
Roof (-Y)	7.321	14.642	-0.180	-0.900	0.180	0.29	-3.60	-6.32	-10.21
Roof (+Y)	14.642	29.283	-0.180	-0.500	0.180	0.29	-3.60	-2.65	-6.54
Roof (-Y)	14.642	29.283	-0.180	-0.500	0.180	0.29	-3.60	-2.65	-6.54
Roof (+Y)	29.283	52.000	-0.180	-0.300	0.180	0.29	-3.60	-0.81	-4.70
Roof (-Y)	29.283	52.000	-0.180	-0.300	0.180	0.29	-3.60	-0.81	-4.70

Notes Roof Pressures:

Start Dist = Start Dist from Windward Edge End Dist = End Dist from Windward Edge

Cp_Max = Largest Coefficient Magnitude Cp_Min = Smallest Coefficient Magnitude

Pp_max = $q_h * G * C_{p_max} - q_{ip} * (+GCPI)$ Pn_max = $q_h * G * C_{p_max} - q_{in} * (-GCPI)$

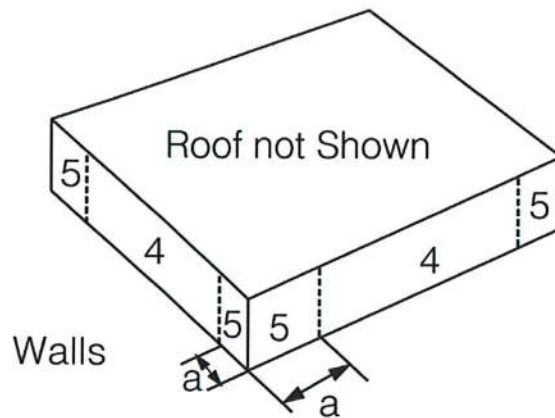
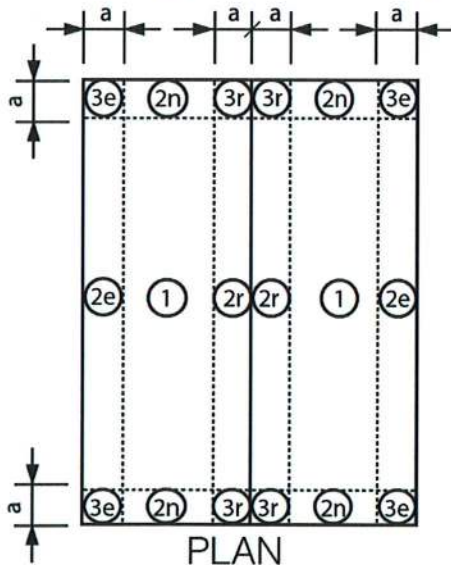
Pp_min* = $q_h * G * C_{p_min} - q_{ip} * (+GCPI)$ Pn_min* = $q_h * G * C_{p_min} - q_{in} * (-GCPI)$

OH = Overhang X = Dir along Ridge Y = Dir Perpendicular to Ridge Z = Vertical

* The smaller uplift pressures due to Cp Min can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7

+ Pressures Acting TOWARD Surface - Pressures Acting AWAY from Surface

Components and Cladding (C&C) Calculations per Ch 30 Part 1:



h/W	= Ratio of mean roof height to building width	= 0.431
h/L	= Ratio of mean roof height to building length	= 0.293
h	= Mean Roof Height above grade	= 14.642 ft
Kh	= $Z < 15 \text{ ft } [4.572 \text{ m}] \rightarrow (2.01 * (15/zg)^{(2/\alpha)})$ {Table 26.10-1}	= 0.575
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
GCPI	= Ref Table 26.13-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= $(0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF$	= 10.81 psf
LHD	= Least Horizontal Dimension: Min(B, L)	= 34.000 ft
al	= Min($0.1 * LHD$, $0.4 * h$)	= 3.400 ft
a	= Max(al , $0.04 * LHD$, 3 ft [0.9 m])	= 3.400 ft
h/B	= Ratio of mean roof height to least hor dim: h / B	= 0.431

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Wind Pressures for C&C Ch 30 Pt 1
All wind pressures include a load factor of 0.6

Description	Zone	Width	Span	Area	1/3 Rule	Ref Fig	GCp Max	GCp Min	p Max psf	p Min psf
ft		ft	ft	sq ft						
Zone 1	1	1.000	1.000	1.00	No	30.3-2D	0.900	-1.800	11.67	-21.39
Zone 2e	2e	1.000	1.000	1.00	No	30.3-2D	0.900	-1.800	11.67	-21.39
Zone 2n	2n	1.000	1.000	1.00	No	30.3-2D	0.900	-2.000	11.67	-23.56
Zone 2r	2r	1.000	1.000	1.00	No	30.3-2D	0.900	-1.800	11.67	-21.39
Zone 3e	3e	1.000	1.000	1.00	No	30.3-2D	0.900	-3.200	11.67	-36.52
Zone 3r	3r	1.000	1.000	1.00	No	30.3-2D	0.900	-2.000	11.67	-23.56
Zone 4	4	1.000	1.000	1.00	No	30.3-1	1.000	-1.100	12.75	-13.83
Zone 5	5	1.000	1.000	1.00	No	30.3-1	1.000	-1.400	12.75	-17.07

Area = Span Length x Effective Width

1/3 Rule = Effective width need not be less than 1/3 of the span length

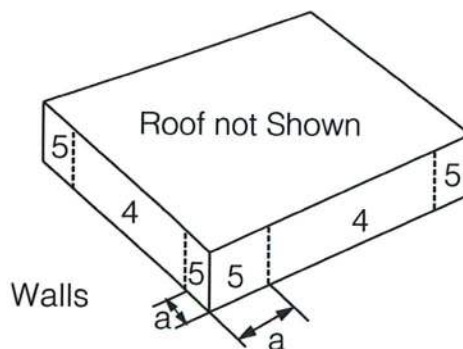
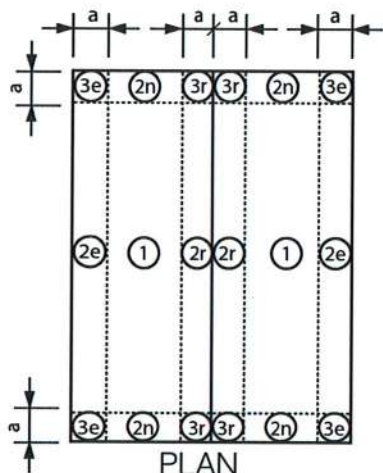
GCp = External Pressure Coefficients taken from Figures 30.3-1 through 30.3-7

p = Wind Pressure: $q_h(GCp - GCpi)$ [Eqn 30.3-1]*

* Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] (Includes LF)

Components and Cladding (C&C) Overhang Calculations per Section 30.9:

h	= Mean Roof Height above grade	= 14.642 ft
Kh	= $Z < 15$ ft [4.572 m] --> $(2.01 * (15/zg)^{(2/\alpha)})$ (Table 26.10-1)	= 0.575
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
GCpi	= Ref Table 26.13-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= $(0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF$	= 10.81 psf



Wind Pressures for C&C per Section 30.9 & Figure 30.3-2
All wind pressures include a load factor of 0.6

Description	Zone	Width	Span Length	Area	1/3 Rule	Ref Fig	GCpi +/-	GCp Max	GCp Min	p Max psf	p Min psf
ft		ft	ft	sq ft							
Zone 1_OH	1_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-28.09
Zone 1_OHS	1_OHS	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-30.04
Zone 2e_OH	2e_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-28.09
Zone 2e_OHS	2e_OHS	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-30.04
Zone 2n_OH	2n_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.800	9.60	-30.25
Zone 2n_OHS	2n_OHS	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.800	9.60	-32.20
Zone 2r_OH	2r_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-28.09
Zone 2r_OHS	2r_OHS	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.600	9.60	-30.04
Zone 3e_OH	3e_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-4.000	9.60	-43.22
Zone 3e_OHS	3e_OHS	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-4.000	9.60	-45.17
Zone 3r_OH	3r_OH	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.800	9.60	-30.25
Zone 3r_OHS	3r_OHS	1.000	1.000	1.00	No	30.3-2D	0.00	0.000	-2.800	9.60	-32.20

#_OH = Zone # on Overhang with Zero Internal Pressure (GCpi = 0)

#_OHS = Zone # on Overhang w/ Soffit w/ Buildings Internal Pressure (GCpi = +/-0.18)

Area = Span Length x Effective Width

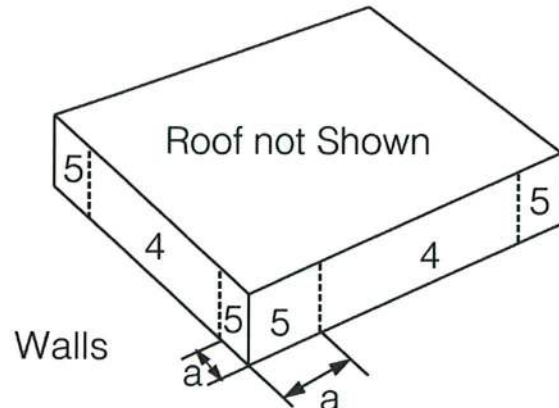
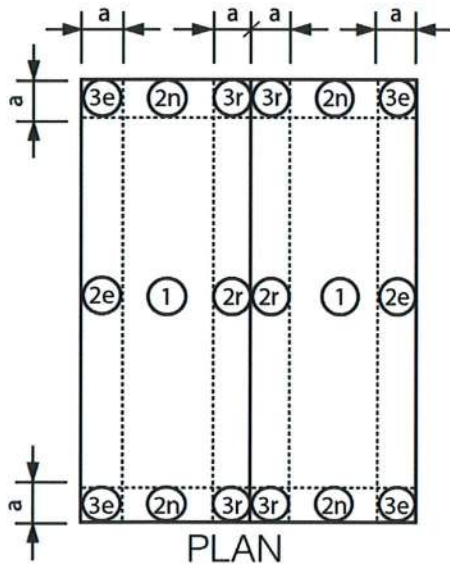
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1/3 Rule = Effective width need not be less than 1/3 of the span length
 $p = \text{Wind Pressure: } qh(GCp - GCpi) * LF \text{ [Eqn 30.3-1]} *$
 * Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] {Includes LF}
 Values of GCp for overhangs include contributions from both upper and lower surfaces.

Components and Cladding (C&C) Zone Summary per Ch 30 Pt 1:



h/W	= Ratio of mean roof height to building width	= 0.431
h/L	= Ratio of mean roof height to building length	= 0.293
h	= Mean Roof Height above grade	= 14.642 ft
Kh	= $Z < 15 \text{ ft [4.572 m]} \rightarrow (2.01 * (15/zg)^{(2/\alpha)}) \text{ [Table 26.10-1]}$	= 0.575
Kzt	= Topographic Factor is 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
GCpi	= Ref Table 26.13-1 for Enclosed Building	= +/-0.18
LF	= Load Factor based upon ASD Design	= 0.60
qh	= $(0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF$	= 10.81 psf
LHD	= Least Horizontal Dimension: $\text{Min}(B, L)$	= 34.000 ft
a1	= $\text{Min}(0.1 * LHD, 0.4 * h)$	= 3.400 ft
a	= $\text{Max}(a1, 0.04 * LHD, 3 \text{ ft [0.9 m]})$	= 3.400 ft
h/B	= Ratio of mean roof height to least hor dim: h / B	= 0.431

Wind Pressure Summary for C&C Zones based Upon Areas Ch 30 Pt 1 (Table 1 of 2)
 All wind pressures include a load factor of 0.6

Zone	Figure	A <= 2.00 sq ft psf	A = 10.00 sq ft psf	A = 20.00 sq ft psf	A = 50.00 sq ft psf
1	30.3-2D	11.67 -21.39	11.67 -21.39	10.37 -18.14	9.60 -13.84
1_OH	30.3-2D	9.60 -28.09	9.60 -28.09	9.60 -24.84	9.60 -20.54
1_OHS	30.3-2D	9.60 -30.04	9.60 -30.04	9.60 -26.79	9.60 -22.49
2e	30.3-2D	11.67 -21.39	11.67 -21.39	10.37 -18.14	9.60 -13.84
2e_OH	30.3-2D	9.60 -28.09	9.60 -28.09	9.60 -24.84	9.60 -20.54
2e_OHS	30.3-2D	9.60 -30.04	9.60 -30.04	9.60 -26.79	9.60 -22.49
2n	30.3-2D	11.67 -23.56	11.67 -23.56	10.37 -21.06	9.60 -17.75
2n_OH	30.3-2D	9.60 -30.25	9.60 -30.25	9.60 -27.75	9.60 -24.45
2n_OHS	30.3-2D	9.60 -32.20	9.60 -32.20	9.60 -29.70	9.60 -26.39
2r	30.3-2D	11.67 -21.39	11.67 -21.39	10.37 -18.14	9.60 -13.84
2r_OH	30.3-2D	9.60 -28.09	9.60 -28.09	9.60 -24.84	9.60 -20.54
2r_OHS	30.3-2D	9.60 -30.04	9.60 -30.04	9.60 -26.79	9.60 -22.49
3e	30.3-2D	11.67 -36.52	11.67 -28.89	10.37 -25.60	9.60 -21.25
3e_OH	30.3-2D	9.60 -43.22	9.60 -35.58	9.60 -32.30	9.60 -27.95
3e_OHS	30.3-2D	9.60 -45.17	9.60 -37.53	9.60 -34.24	9.60 -29.89
3r	30.3-2D	11.67 -23.56	11.67 -23.56	10.37 -21.06	9.60 -17.75
3r_OH	30.3-2D	9.60 -30.25	9.60 -30.25	9.60 -27.75	9.60 -24.45
3r_OHS	30.3-2D	9.60 -32.20	9.60 -32.20	9.60 -29.70	9.60 -26.39
4	30.3-1	12.75 -13.83	12.75 -13.83	12.18 -13.26	11.42 -12.50
5	30.3-1	12.75 -17.07	12.75 -17.07	12.18 -15.92	11.42 -14.40

Wind Pressure Summary for C&C Zones based Upon Areas Ch 30 Pt 1 (Table 2 of 2)
 All wind pressures include a load factor of 0.6

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Zone	Figure	A = 100.00 sq ft psf	A = 200.00 sq ft psf	A = 300.00 sq ft psf	A > 500.00 sq ft psf
1	30.3-2D	9.60 -10.59	9.60 -10.59	9.60 -10.59	9.60 -10.59
1_OH	30.3-2D	9.60 -17.29	9.60 -17.29	9.60 -17.29	9.60 -17.29
1_OHS	30.3-2D	9.60 -19.23	9.60 -19.23	9.60 -19.23	9.60 -19.23
2e	30.3-2D	9.60 -10.59	9.60 -10.59	9.60 -10.59	9.60 -10.59
2e_OH	30.3-2D	9.60 -17.29	9.60 -17.29	9.60 -17.29	9.60 -17.29
2e_OHS	30.3-2D	9.60 -19.23	9.60 -19.23	9.60 -19.23	9.60 -19.23
2n	30.3-2D	9.60 -15.25	9.60 -12.75	9.60 -12.75	9.60 -12.75
2n_OH	30.3-2D	9.60 -21.95	9.60 -19.45	9.60 -19.45	9.60 -19.45
2n_OHS	30.3-2D	9.60 -23.89	9.60 -21.39	9.60 -21.39	9.60 -21.39
2r	30.3-2D	9.60 -10.59	9.60 -10.59	9.60 -10.59	9.60 -10.59
2r_OH	30.3-2D	9.60 -17.29	9.60 -17.29	9.60 -17.29	9.60 -17.29
2r_OHS	30.3-2D	9.60 -19.23	9.60 -19.23	9.60 -19.23	9.60 -19.23
3e	30.3-2D	9.60 -17.96	9.60 -14.67	9.60 -12.75	9.60 -12.75
3e_OH	30.3-2D	9.60 -24.66	9.60 -21.37	9.60 -19.45	9.60 -19.45
3e_OHS	30.3-2D	9.60 -26.61	9.60 -23.32	9.60 -21.39	9.60 -21.39
3r	30.3-2D	9.60 -15.25	9.60 -12.75	9.60 -12.75	9.60 -12.75
3r_OH	30.3-2D	9.60 -21.95	9.60 -19.45	9.60 -19.45	9.60 -19.45
3r_OHS	30.3-2D	9.60 -23.89	9.60 -21.39	9.60 -21.39	9.60 -21.39
4	30.3-1	10.84 -11.92	10.27 -11.35	9.93 -11.01	9.60 -10.59
5	30.3-1	10.84 -13.26	10.27 -12.11	9.93 -11.44	9.60 -10.59

- * A is effective wind area for C&C: Span Length * Effective Width
- * Effective width need not be less than 1/3 of the span length
- * Maximum and minimum values of pressure shown.
- * + Pressures acting toward surface, - Pressures acting away from surface
- * _OH represents an Overhang in the zone specified
- * Overhang pressures calculated per Para 30.9
- * Per Para 30.2.2 the Minimum Pressure for C&C is 9.60 psf [0.460 kPa] {Includes LF}
- * Interpolation can be used for values of A that are between those values shown.

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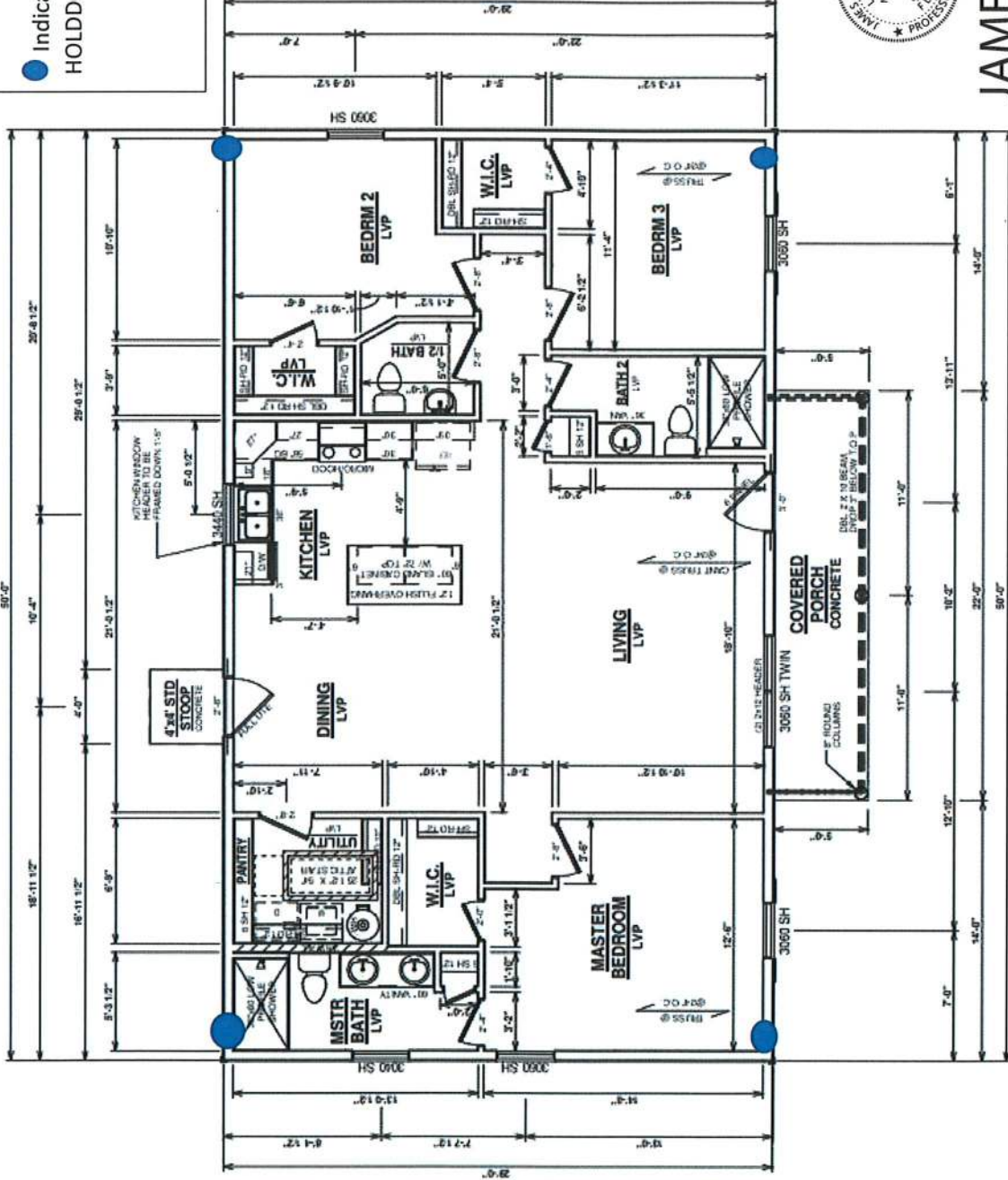
For vaulted ceilings, balloon framing required.

Structural grade Thermo-ply sheathing on interior of wall w/ 3" edge & 6" field spacing may be used as an alternate to OSB for interior shear walls.

Porch posts to have min. ABU Col Base w/ (12) 16d nails & PC Col Cap w/ (8) 16d nails to post & (12) 16d nails to beam, or approved alternative, unless noted otherwise.

Sheath exterior 100%

● Indicates Simpson HDUS
HOLDDOWN



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(1) FIRST FLOOR PLAN